Operation: research

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Assume that you are responsible for providing health care services to 10,000 people living in a region devoid of health services. The budget for training personnel is 40 million francs CFA. To train a doctor costs 20 million francs; to train a health auxiliary costs one million. Do you choose to train two doctors or 40 auxiliaries?

This problem is more than a simple mathematical puzzle: in many developing countries situations such as this one are only too real and pressing. How best to solve it and similar problems in the health field?

This is what a group of 17 health professionals from various disciplines attempted to resolve at a seminar-workshop held in December 1976 under the auspices of the Centre universitaire des sciences de la santé (CUSS) in Yaounde, Cameroon. Here they familiarized themselves with operational/applied research and its applications to health research and policy.

Operational/applied research is a logical problem solving technique that uses scientific methods to study complex problems present in a system having definite goals, yet facing human, technical or economic constraints. It also goes beyond the initial formulation of the problem to take into account the unobvious factors that significantly affect it.

In our puzzle, the goals and constraints are obvious. But, to solve it, you must take into account such factors as doctor-patient ratio, the time the doctor can allocate to each, considering the distances he must travel and the available means of transport. Other factors must also be considered: the most prevalent diseases, the deaths they cause, the sanitary facilities in the region, and the overall health budget.

If, for example, it is found that most of the health problems are easy to identify (gastrointestinal disorders, respiratory ailments, infectious diseases), then you can define what type of personnel is required to treat them. It may be found that in 80 or 90 percent of the cases the health worker doesn't need seven years of post-secondary education to do this, but could, with a few weeks or months training, adequately serve most of the health needs of the region.

It is obvious that the approach to this problem must not only be systematic but also multidisciplinary since it reaches beyond actual health care to the area of health policy. Doctors, economists, administrators, nurses, engineers, statisticians, sociologists and so on must be involved.

The first step in operational/applied research is to identify the problem and then study the means available to solve it in order to choose the most appropriate ones. While this technique has been widely used in industry since its inception during the second world war, it is still a newcomer to the health field.

In the industrialized countries, health care systems generally developed empirically. A number of non-industrialized countries followed their example and adopted the existing systems. Others, however, are aware of the problems inherent in these systems — uneven distribution of care, high costs, impersonal treatment — and are looking for alternatives. Operational research could assist them in their search for original solutions.

Cameroon, through CUSS, has emphasized training doctors, nurses and health technicians, prepared to serve as a team in rural communities. The program, still in its early stages, appears to have increased the delivery of health care services to rural areas although some problems still exist. In addition, CUSS has as one of its institutional objectives, the carrying out of research. For these reasons, CUSS and the Ministry of Health, with IDRC support, convened the workshop on operational/applied research.

Dr. T.C. Nchinda, professor of public health and general secretary of the Ad Hoc Commission of Operational Research at CUSS described the situation to the participants in these terms: "Imagine a research situation in which the problems are not clearly defined, the cause and effect relationships are uncertain and in which many of the variables cannot be quantified. Add to those communication barriers between the professional and the users, on the one hand, and between professionals of various disciplines, on the other. Finally, examine the political and institutional realities. The result is a situation similar to that in which we find ourselves today."

The first step to righting this situation is to define priority problems that must be studied and solved. The participants, divided into two groups, itemized 55 such problems in Cameroon. After much discussion, two were brought to the top of the list.

The groups' next task was to draw up an operational research proposal: to define the problem, examine the basic components, set the objectives, develop the methodology and indicate the steps and phases of this proposal, including the budget, required for its realization. The exercise included choosing research tools and means of evaluation, both essential components for the successful completion of the proposal.

Under the direction of Professor Dan N. Lantum coordinator of CUSS's public health unit, one group worked on the problem of training and utilizing nursing personnel and midwives graduating from ENISFAY, one of two national training schools. It had been noted that ENISFAY had fallen short of its targeted 5 000 graduates and that many hospitals were dissatisfied with the quality of nursing care provided. The nursing personnel was itself dissatisfied with working conditions and many had resigned during their first year at work.

It had also been realized that, in some instances in Cameroon, doctors were badly distributed and that some were underused. The second group tackled this problem by drawing up a research proposal for the evaluation of doctors' training and utilization in health services, a project not only important in Cameroon but also in many African countries considering or introducing programs similar to that offered at CUSS.

With the writing up of two detailed proposals, ready for submission to possible funding groups, the workshop had reached its objectives: to train a group of resource people in the area of operational/applied research who could be helpful when a government or institution faced a problem in the area of health. It also showed that a scientific approach to drawing up research proposals was not a luxury, nor was it necessarily complicated, and illustrated how a systematic approach could help orient future research and health policies.

This valuable exercise will undoubtedly be repeated at an international level in order to offer to health authorities the opportunity of systematically investigating certain health problems, and of then developing the type of intervention needed to solve them. □

An English translation of the proceedings of the Yaounde workshop is in preparation, and will be published by the IDRC in the near future.